



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/684,927	10/10/2000	Hideki Usuki	DAIN: 563	2321

7590 09/23/2002

PARKHURST & WENDEL, L.L.P.  
1421 Prince Street, Suite 210  
Alexandria, VA 22314-2805

EXAMINER
----------

XU, LING X

ART UNIT	PAPER NUMBER
----------	--------------

1775

DATE MAILED: 09/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-9

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/684,927		USUKI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Ling X. Xu		1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 August 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 4-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicants' amendments filed on 8/15/2002 have been entered. Claims 2-3 have been cancelled. In light of applicants' amendments, previous rejection based on 35 USC 112(2) and 102 (b) are now withdrawn.

### ***Claim Rejections - 35 USC 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 4-9 are rejected under 35 U.S.C. 103(a) as obvious over Oshima et al. (US 5,427,997) in view of Kanto et al. (US 5,134,112).

Oshima discloses that a heat transfer sheet comprises (See Fig. 1):

- a release layer made of acrylic resin (Col. 5, lines 45-55);
- a transparent resin layer made of resins such as polyester, acrylic, epoxy resins (Col. 4, lines 45-55);
- a adhesive layer made of polyester resins;
- a substrate film;
- a back layer (Col. 4, lines 20-25) or a heat-resistant slip layer (Col. 21, lines 25-32).

Oshima also discloses that the release layer is not transferable and the resin layer is releasable from the substrate film (Col. 2, lines 10-20).

Oshima does not disclose that the adhesive layer contains microsilica in the range of 3-10%.

Kanto teaches by incorporating fine particles into the adhesive layer can reduce the coefficient of friction of its surface (Col. 6, lines 10-20). Examples of fine particles are silica (microsilica, because the thickness of the adhesive layer is on the order of a few  $\mu\text{m}$ ) (Col. 4, lines 12-20). Kanto also teaches that the addition of such inorganic fine particles in the range of 0.01 to 10% by weight makes it possible to reduce the coefficient of friction of the surface of the adhesive layer (Col 4, lines 12-20).

Therefore, it would have been obvious to one of ordinary skill in the art to add microsilica in the range of 0.01 to 10% into the adhesive layer of Oshima in order to reduce the coefficient of friction of the surface of the adhesive layer, as taught by Kanto.

The combination of Oshima and Kanto teaches incorporating microsilica in the range of 0.01 to 10%, which includes the claimed range of 0.3-10%, in the adhesive layer. As disclosed in the specification, the incorporation of microsilica into the protective layer can satisfy a requirement such that the coefficient of friction between the surface of the protective layer and the surface of the image-receiving sheet before thermal transfer is 0.05 to 0.5 in terms of  $\mu_0$  and  $\mu$  with the value of  $\mu_0/\mu$  being 1.0 to 1.5. Accordingly, the adhesive layer added microsilica in the range of 0.01 to 10% as taught by Oshima and Kanto will also have the same properties as claimed, such as the coefficient of friction values.

Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical

Art Unit: 1775

processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

### ***Response to Arguments***

3. Applicant's arguments filed 8/15/2002 have been fully considered but they are not persuasive.

Applicants argue that the values of the coefficient of static friction and coefficient of dynamic friction values are particular to applicants' invention and Oshima has not discussion of those particular controls and why they are needed.

As stated above, the combination of Oshima and Kanto teaches incorporating microsilica in the range of 0.01 to 10%, which includes the claimed range of 0.3-10%, in the adhesive layer can reduce the coefficient of friction of the surface of the adhesive layer. As disclosed in the specification, the incorporation of microsilica into the protective layer can satisfy a requirement such that the coefficient of friction between the surface of the protective layer and the surface of the image-receiving sheet before thermal transfer is 0.05 to 0.5 in terms of  $\mu_0$  and  $\mu$  with the value of  $\mu_0/\mu$  being 1.0 to 1.5. The values of the coefficient of friction as claimed are the direct result of having microsilica in the range of 0.3-10% in the adhesive layer. Accordingly, the adhesive

layer added microsilica in the range of 0.01 to 10% as taught by Oshima and Kanto will also have the same properties as claimed, such as the coefficient of friction values.

Applicants also argue that Oshima shows that an adhesive containing 0.8% of microsilica, therefore, the advantages to be gained by using relatively larger quantities of microsilica are not taught or suggested. The Applicants also argue the second reference, Kanto, lacks any teaching regarding the use of an adhesive layer to maintain a coefficient of friction between the surface of the protective layer and the surface of an image-receiving sheet before thermal transfer as claimed.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). As stated above, the combination of Oshima and Kanto teaches incorporating microsilica in the range of 0.01 to 10%, which includes the claimed range of 0.3-10%, in the adhesive layer can reduce the coefficient of friction of the surface of the adhesive layer.

The cited working and comparative examples in the specification and the results appearing in Table 1 at page 22 (the Examiner's note: should be Table 1 at page 21) and in Table 2 at page 23 also support that the values of the coefficient of friction as claimed are the direct result of having microsilica in the range of 0.3-10% in the adhesive layer.

With respect to the showing in Table 2, Applicants argue that the print density is also a concern in this invention. However, the print density, as disclosed in the specification on page 23, is also directly related to the amount of microsilica in the protective layer. Since the combination of Oshima and Kanto teaches incorporating microsilica in the range of 0.01 to 10%, which includes the claimed range of 0.3-10%, in the adhesive layer, Oshima and Kanto teach all the limitations of the claims 1 and 4-9.

### ***Conclusion***

**4. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling X. Xu whose telephone number is 703-305-0395. The examiner can normally be reached on 8:00 - 4:30 Monday - Friday.

Application/Control Number: 09/684,927  
Art Unit: 1775

Page 7

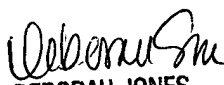
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah D. Jones can be reached on 703-308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

lx

4X

September 16, 2002

  
DEBORAH JONES  
SUPERVISORY PATENT EXAMINER